

Harada
Valves / *from*

Keystone Plastics Company



Harada Valves

*heart of a leak-proof automatic watering system
for small laboratory animals*

WATER BOTTLES ARE A PROBLEM. Experts have long agreed that water bottles are the chief cause of animal room inefficiency. This is especially true at large laboratories where thousands of bottles must be washed and filled at frequent intervals. When water bottles are successfully eliminated, a great many man-hours are saved.

The automatic watering system is, therefore, mainly a labor saving device. Once it is installed, an unlimited supply of fresh water is available to the animals. Only occasional cleaning and servicing is necessary.

The key to a workable automatic system is the drinking valve. It must operate at low water pressures so that the smallest laboratory animals can open it. Unfortunately, leakage is characteristic of low pressure systems. Most of the earlier automatic systems were considered unsanitary because of this common failing.

SOMETHING NEW: THE HARADA VALVE. In 1961, another animal drinking valve was patented. But unlike the others, this one was carefully designed to work at low water pressures without leaking.

It operates like a hydraulic ram. Water pressure on the valve head keeps it closely pressed against the valve seat. Protruding from the rear of the valve head is an elongated plunger which is exposed at the other end. When an animal manipulates the exposed end by licking or pecking, the valve head moves away from the seat and allows a trickle of water to escape along the loose fitting plunger.

New materials are what really make the Harada Valve work. The valve head is made of silicone rubber while the valve seat is of Teflon. The soft rubber head molds itself into the seat, causing a perfect fit regardless of surface irregularities. The greasy texture of the Teflon seat reduces friction and prevents mineral deposits from clogging the valve. This silicone rubber/Teflon combination has been tested for more than two years and has proven to be leak-proof and highly durable.

The drinking valve bodies are made of chrome-plated brass or stainless steel. Rust and corrosion are never a problem. Nor is biting. Animals cannot damage these hard surfaces with their teeth.

THE SERIES 5000 HARADA VALVE has been widely accepted throughout the industry. It is rugged, simple in construction, and leak-proof. There are separate models

for mice, rats, and larger rodents (also used for monkeys). The only difference is in the plunger. Rat valves have a bite guard around the plunger while the large rodent valves have an enclosed plunger with a heavy-duty actuator.

THE SERIES 7000 HARADA VALVE comes in two sections: the drinking valve assembly and the line check valve assembly. The drinking valve assembly can be removed by merely twisting it off. Water from the feeder line need not be stopped. This is especially handy when it is necessary to sanitize isolated cages rather than the whole rack. It is also useful for routine valve maintenance and occasional repair work.

AUTOMATIC WATERING SYSTEMS PAY OFF. The Harada Valve was designed by a specialist in animal care. Those skilled in the art of raising and caring for large numbers of laboratory animals have quickly realized its value. Many research institutions, pharmaceutical companies, medical schools, and animal farms are switching to this modern automatic system of watering. Their animals get a better water supply . . . and they are saving time and money.

This is the first low water pressure valve especially engineered not to leak. In manufacturing these items, the following goals are kept in mind:

- (1) The system should furnish a constant supply of clean, fresh water.
- (2) Very little attention should be necessary.
- (3) The valves should be easy to clean and sanitize.
- (4) Installation should be economical in any type of cage.
- (5) The system should give many years of dependable service while requiring only occasional maintenance.

INSTALLATION IS SIMPLE. Any normal outlet will serve as a source for an automatic system. However, normal water pressure is too high. A pressure reducer and a pressure gauge should be installed. An inexpensive activated carbon filter is also recommended because of the particles and minerals present in most water. Once this is done, it is only a matter of running feeder lines of plastic hose to all appropriate locations. Most users will want a line to each rack of cages.

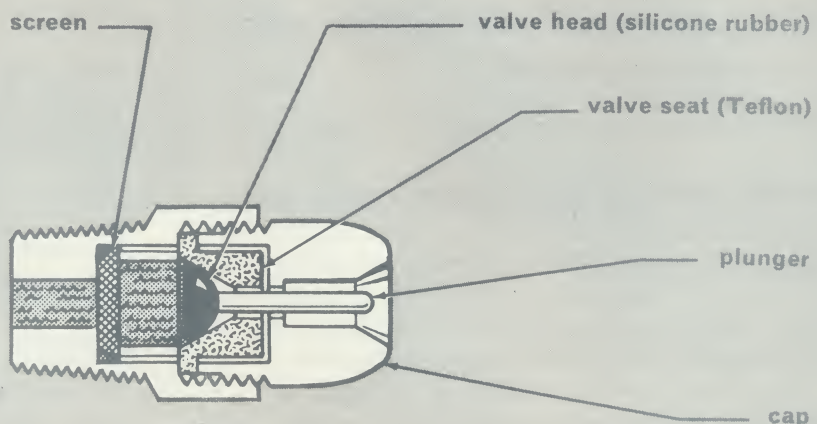
The Harada Valves may be installed at any angle, from vertical to horizontal. Each valve is screwed into a rigid plastic pipe that runs parallel to the row of cages. There is a similar pipe for every row of cages in a rack. All of these lateral lines are connected to a feeder line by means of a perpendicular manifold.

Installation may be done by a plumber. However, most users prefer to install the system by themselves. For this purpose, Harco Scientific supplies the rigid plastic pipe, tubing, fittings, and other parts necessary for a complete working installation.

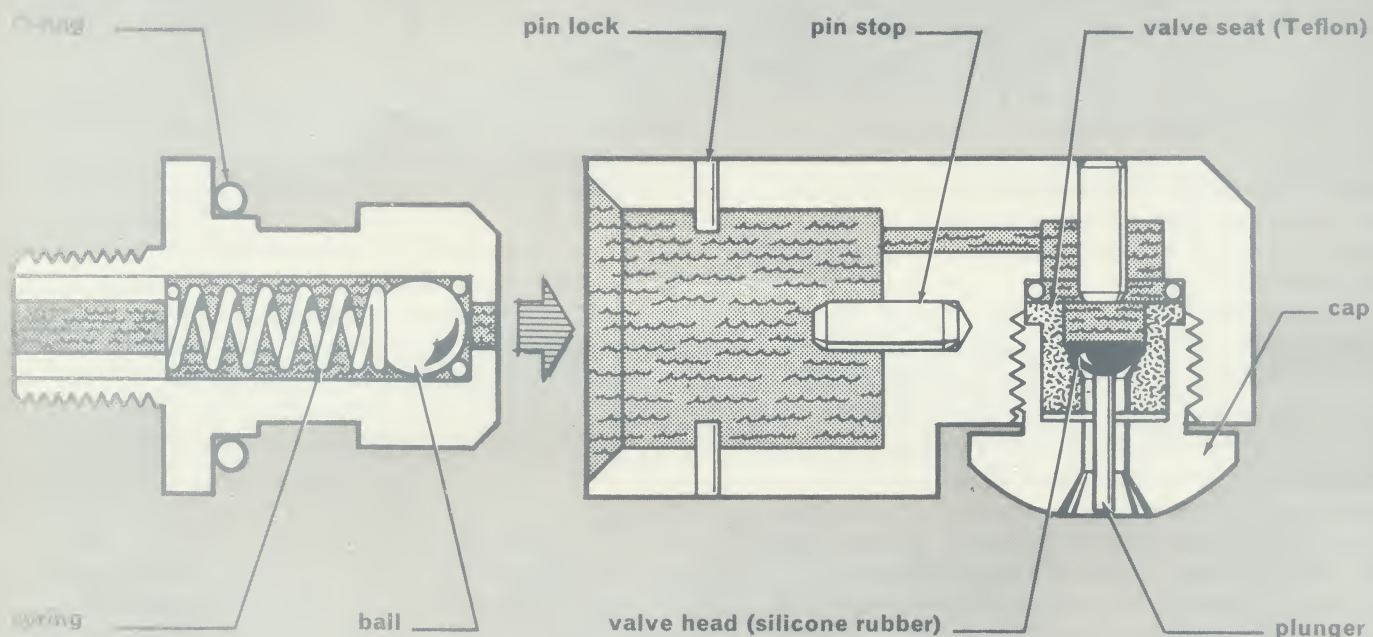
series 5000 & 7000

Harada Valves;

how they are constructed



#5000 STANDARD DRINKING VALVE



#7100 LINE CHECK VALVE ASSEMBLY

#7100 QUICK DISCONNECT DRINKING VALVE

PRACTICALLY NO MAINTENANCE IS REQUIRED.

This is especially true when compared to bottles. The following procedures are suggested to keep the system in peak operating condition:

- (1) Change the activated charcoal cartridge in the main filter regularly.
- (2) Flush the lines frequently by opening the drain cocks and allowing some water to flow through the lines.
- (3) Clean and sanitize the Harada Valves whenever the cages are done.

Harada Valves may be disassembled easily and worn parts replaced. Usually, a good cleaning is all that is needed to get the valve back to proper operating condition.

STANDARD HARADA VALVES



#5000 for rats

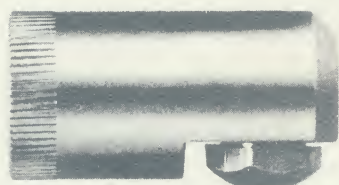


#5020 for mice



#5040 for large rodents
and monkeys

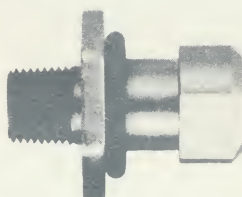
QUICK DISCONNECT HARADA VALVES



#7100 for rats, larger rodents
and monkeys



#7200 for mice



#7007 for quick disconnect;
must be used with #7100 and #7200

Keystone Plastics Company
Specialists in Plastics Processing

KEYSTONE STANDARD ACRYLIC PLASTIC "MOUSE-HOUSE"* CAGES

Price Each Net - In lots of

<u>Model No.</u>	<u>1-19</u>	<u>20-49</u>	<u>50-124</u>	<u>125-over</u>
10	\$ 2.75	\$ 2.75	\$ 2.53	\$ 2.39
10-T	2.05	2.05	1.89	1.79
101	5.35	4.90	4.60	4.43
101-T	3.30	3.30	3.02	2.86
102	6.85	6.25	5.90	5.67
103	4.95	4.55	4.15	4.05
103-T	3.25	3.25	2.99	2.82
110	6.10	5.60	5.25	5.04
	<u>1-19</u>	<u>20-49</u>	<u>50-99</u>	<u>100-over</u>
150	8.25	7.55	7.09	6.80
160	8.05	7.40	6.97	6.70
170	9.45	8.65	8.18	7.86

LABORATORY BREEDING BOXES - NATURAL POLYPROPYLENE

<u>Model No.</u>	<u>10-90</u>	<u>100-200</u>	<u>210-Over</u>	
**KA-1793	\$ 3.00	\$ 2.80	\$ 2.70	
	<u>10-90</u>	<u>100-200</u>	<u>210-500</u>	<u>510-over</u>
***KA-1929	2.83	2.61	2.47	2.39
****KA-1948	1.52	1.38	1.22	1.16

** Packed: 10/carton Weight 2 lbs. each: 24lbs./carton
 *** Packed: 10/carton Weight 1 lb. 10 oz. 20lbs./carton
 **** Packed: 30/carton Weight 14 oz. each: 28lbs./carton
 Less than carton shipment add \$5.50

STAINLESS STEEL CAGES

103 s/s	\$ 8.45 each	Covers for the Stainless Steel
101 s/s	8.48 each	Cages are the standard covers
150 s/s	14.00 each	for "Mouse-House" Cages.

* Registered Trademark

KEYSTONE STAINLESS STEEL COVERS FOR "MOUSE-HOUSE"* CAGES

Price each Net - In lots of

<u>Model No.</u>	<u>1-19</u>	<u>20-49</u>	<u>50-124</u>	<u>125-over</u>
10-STD	\$ 2.40	\$ 2.40	\$ 2.30	\$ 2.24
10-X	3.65	3.50	3.43	3.23
101-STD	3.80	3.60	3.53	3.43
101-A	4.95	4.70	4.42	4.28
101-S	4.00	3.80	3.72	3.60
101-AS	5.25	5.00	4.90	4.75
101-H	5.05	4.80	4.70	4.56
102-STD	4.75	4.50	4.41	4.28
102-A	6.00	5.70	5.60	5.42
102-S	4.55	4.30	4.22	4.08
102-AS	5.80	5.50	5.39	5.04
103-STD	4.20	4.00	3.92	3.43
103-A	5.35	5.10	5.00	4.85
103-X	5.35	5.10	5.00	4.85
103-XY	5.85	5.60	5.50	5.35
103-S	4.20	4.00	3.92	3.43
110-S	4.55	4.30	4.23	4.08
110-AS	5.80	5.50	5.39	5.04
	<u>1-19</u>	<u>20-49</u>	<u>50-99</u>	<u>100-over</u>
150-STD	5.80	5.50	5.39	4.94
150-AS	8.40	8.00	7.84	7.60
150-S	5.60	5.30	5.19	4.75
150-A	8.65	8.20	8.04	7.80
160-STD	5.35	5.10	5.00	4.85
160-A	7.90	7.50	7.35	7.14
160-AWM	8.87	8.87	8.87	8.87
170-STD	7.35	7.00	6.86	6.66
170-AS	9.20	9.03	8.75	8.33
170-AWM	9.42	9.42	9.42	9.42

* Registered Trademark

KEYSTONE PLATED COVERS FOR LABORATORY BREEDING BOXES

Price Each Net - In lots of

<u>Model No.</u>	<u>30-90</u>	<u>120-210</u>	<u>240-480</u>	<u>510-990</u>	<u>1050-over</u>
1948-A $\frac{1}{2}$	\$ 3.08	\$ 2.80	\$ 2.75	\$ 2.66	\$ 2.54
1948-A $\frac{1}{4}$	3.15	3.00	2.94	2.85	2.715
1948-AS $\frac{1}{2}$	3.15	3.00	2.94	2.85	2.715
1948-AS $\frac{1}{4}$	3.36	3.20	3.14	3.04	2.895

	<u>10-90</u>	<u>100-200</u>	<u>210-490</u>	<u>510-1000</u>	<u>1050-over</u>
1929-A $\frac{1}{2}$	3.08	2.80	2.75	2.66	2.54
1929-A $\frac{1}{4}$	3.15	3.00	2.94	2.85	2.715
1929-AB $\frac{1}{2}$	3.78	3.60	3.53	3.42	3.255
1929-AB $\frac{1}{4}$	3.99	3.80	3.73	3.61	3.44
1929-WM	5.04	4.80	4.70	4.085	3.90
1929-WB	4.75	4.50	4.41	4.28	4.07

KEYSTONE PLATED RACKS

Shelf Type - Convenient Size

<u>Stock Number</u>	<u>Description</u>	<u>1-10</u>	<u>Unit Price</u> <u>11-50</u>	<u>50-over</u>
1210	Five Shelves	\$ 120.00	\$ 94.50	\$ 87.50
1215	Five Shelves	115.00	91.50	86.00
1225	Five Shelves*	125.00	99.50	92.50

Suspended Cage Type - Economical Size

1310	Includes 126 #101 Cages	\$ 861.00 each
1360	Includes 60 #101 Cages	652.00 each
1336	Includes 36 #110 Cages	565.00 each
1372	Includes 72 #110 Cages	1014.00 each

Heavy duty plating add \$ 45.00 - *Extra shelf - \$ 31.50
 All Racks may be equipped with an automatic watering system.
 Any Rack built to your specifications.
 Prices given upon request.

KEYSTONE SPECIAL CAGES AND COVERS

<u>Stock Number</u>	<u>Description</u>	<u>Unit Price</u>		
		<u>1-72</u>	<u>73-301</u>	<u>302-over</u>
1919	GUINEA PIG CAGE, 38 3/4" X 26 3/4" X 10", Cage Bottom, Polyethylene, no cover needed	31.70	28.50	26.95
	HAMSTER OR RAT CAGE, 15" X 13" X 6 3/4"			
1920-pc	Cage Bottom, Polycarbonate, Clear	11.50	11.00	10.00
1921-pp	Cage Bottom, Polypropylene, Opaque	4.10	3.90	3.55
1922-A	Cover, Wire Bar, w/divider for food and water, w/holdown clamps	4.80	4.35	3.85
	RAT OR HAMSTER CAGE, 18 7/8" X 10 3/8" X 6"			
1936-pc	Cage Bottom, Polycarbonate, Clear	11.50	11.00	10.00
1936-pp	Cage Bottom, Polypropylene, Opaque	4.10	3.90	3.55
1936-A	Cover, Similar to 1922-A	4.90	4.45	3.95
	MOUSE CAGE, SMALL, 11 1/2" X 7 1/4" X 5"			
1949-pc	Cage Bottom, Polycarbonate, Clear	6.75	6.50	5.95
1949-pp	Cage Bottom, Polypropylene, Opaque	1.85	1.75	1.60
	RESTRAINING CAGES	<u>1-3</u>	<u>4-9</u>	<u>10-over</u>
1950	Small Restraining Cage, Acrylic, Clear	13.00	12.60	11.60
1951	Medium, Restraining Cage, Acrylic, Clear	14.70	14.00	13.00
1952	Large, Restraining Cage, Acrylic, Clear	19.60	18.50	17.50
	MOUSE HOLDER	<u>1-6</u>	<u>7-12</u>	<u>13-over</u>
1960	Funnel type, Acrylic, Clear	8.50	8.00	7.50
	DISPOSABLE CAGES		<u>CASE PRICE</u>	
		<u>1-6</u>	<u>7-19</u>	<u>20-over</u>
1970	Disposable Cage Bottom, Styrene, Clear (size 11 1/2" X 7 1/4" X 5", but disposable	24.00	19.70	17.30
D-1	Disposable Cage Bottom, Butyrate, Clear Quantity prices given on request.	.60 each		

KEYSTONE PLATED COVERS FOR LABORATORY BREEDING BOXES

Price Each Net - In lots of

<u>Model No.</u>		<u>30-90</u>	<u>120-210</u>	<u>240-480</u>	<u>510-990</u>	<u>1050-over</u>
1948-A	$\frac{1}{2}$	\$ 3.08	\$ 2.80	\$ 2.75	\$ 2.66	\$ 2.54
1948-A	$\frac{1}{4}$	3.15	3.00	2.94	2.85	2.715
1948-AS	$\frac{1}{2}$	3.15	3.00	2.94	2.85	2.715
1948-AS	$\frac{1}{4}$	3.36	3.20	3.14	3.04	2.895

		<u>10-90</u>	<u>100-200</u>	<u>210-490</u>	<u>510-1000</u>	<u>1050-over</u>
1929-A	$\frac{1}{2}$	3.08	2.80	2.75	2.66	2.54
1929-A	$\frac{1}{4}$	3.15	3.00	2.94	2.85	2.715
1929-AB	$\frac{1}{2}$	3.78	3.60	3.53	3.42	3.255
1929-AB	$\frac{1}{4}$	3.99	3.80	3.73	3.61	3.44
1929-WM		5.04	4.80	4.70	4.085	3.90
1929-WB		4.75	4.50	4.41	4.28	4.07

KEYSTONE PLATED RACKS

Shelf Type - Convenient Size

<u>Stock Number</u>	<u>Description</u>	<u>1-10</u>	<u>Unit Price</u> <u>11-50</u>	<u>50-over</u>
1210	Five Shelves	\$ 120.00	\$ 94.50	\$ 87.50
1215	Five Shelves	115.00	91.50	86.00
1225	Five Shelves*	125.00	99.50	92.50

Suspended Cage Type - Economical Size

1310	Includes 126 #101 Cages	\$ 861.00 each
1360	Includes 60 #101 Cages	652.00 each
1336	Includes 36 #110 Cages	565.00 each
1372	Includes 72 #110 Cages	1014.00 each

Heavy duty plating add \$ 45.00 - *Extra shelf - \$ 31.50
 All Racks may be equipped with an automatic watering system.
 Any Rack built to your specifications.
 Prices given upon request.

AUTOCLAVABLE DEEP DRAWN ALUMINUM ALLOY CAGES

<u>Stock Number</u>	<u>Description</u>	<u>Unit Price</u>
MICE		
4976	6 7/8" X 12 3/4" X 6" - 58sq. in. floor area - Natural metal finish- Seamless construction Cage bottom	\$ 7.18 ea.
4970-CP	Standard Cover - Drop on style 1/4" perforations - with Alum-ilite finish	3.14 ea.
4970-CS	Alternate Cover - Drop on style - slotted for ventilation	3.14 ea.
4970-W	Alternate Cover - Drop on style - Wire with built-in feeder	*
4970-PF	Alternate Cover - Perforated cover with removable alum. feeder	5.68 ea.
4970-SF	Alternate Cover - Slotted cover with alum. feed hopper	5.68 ea.
MICE		
4986	10 3/8" X 12 3/4" X 6" - 98 sq. in. floor area - Natural metal finish - seamless construction Cage bottom	9.20 ea.
4980-CP	Standard Cover - All aluminum with 1/4" perforations	3.50 ea.
4980-CS	Alternate Cover - Drop on style - slotted for ventilation	3.50 ea.
4980-W	Alternate Cover - Sturdy wire - center built-in feeder	*
4980-PF	Alternate Cover - Perforated cover with removable feeder	6.52 ea.
4980-SF	Alternate Cover - Slotted cover with alum. feed hopper	6.52 ea.
RATS		
4996	12 3/4" X 20 3/4" X 6" - 210 sq. in. floor area - Natural metal finish - Seamless construction Cage bottom	13.80 ea.
4990-CP	Standard Cover - Drop-on style with 1/4" holes	6.12 ea.
4990-CS	Alternate Cover - Drop-on style - slotted for ventilation	6.12 ea.
4990-W	Alternate Cover - Sturdy wire - long V-type feeder	*
4990-PF	Alternate Cover - incorporation a built-in slotted feeder	9.16 ea.
4990-SF	Alternate Cover - Slotted cover with alum. feed hopper	9.16 ea.

* Prices on all "W" Model covers quoted upon request.

- ACCESSORIES -

10-BB	Opaque plastic cage	\$ 2.35 each
101-BB	Opaque plastic cage	6.30 each

FEEDERS

150-F	Stainless Steel	\$ 2.75 each
102-F	Stainless Steel	2.45 each
103-F	Stainless Steel	2.15 each
Special	Galvanized	2.50 each
Special	Stainless Steel	3.50 each
Special	Porcelain	4.00 each

- ACCESSORIES -
(Cont.)

Exercise wheel	EXERCISE WHEELS	
Exercise wheel	4" Diameter Stainless Steel	\$ 3.50 ea.
	6" Diameter Stainless Steel	4.00 ea.

	METAL FLOORS	
10	Stainless Steel	\$ 2.40 ea.
103-RF	Stainless Steel	3.70 ea.
101-RF	Expanded Metal	4.00 ea.
110-RF	Expanded Metal	4.00 ea.
150-RF	Expanded Metal	4.20 ea.
160-RF	Expanded Metal	4.20 ea.
170-RF	Expanded Metal	4.60 ea.

Safety Catch	Stainless Steel	.26 ea.
Water Bottle	100 cc. Capacity	.75 ea.
Water Bottle Holder	Stainless Steel	5.50 ea.
Water Bottle Holder	With Drip Cup	7.00 ea.
Single Divider	Stainless Steel	3.50 ea.
Double Divider	Stainless Steel	5.00 ea.
Record Card Holder	Aluminum	.33 ea.
Removable Saddle	Stainless Steel	.95 ea.

SANI - CHIP BEEDING	50lb. Bag	\$ 3.00 ea.
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LABORATORY FOOD HANDLING EQUIPMENT

Mobile Bin		
5524	30 Gal. Capacity	\$ 137.00 ea.
5500	38 Gal. Capacity	149.00 ea.
5528	27 Gal. Capacity	110.00 ea.
5530	30 Gal. Capacity	138.00 ea.
5550	48 Gal. Capacity	162.00 ea.
4426-U	Alum Alloy Tray	17.40 ea.
4502-U	Alum Alloy Tote Box	25.75 ea.
5344	Aluminum Pan	1.45 ea.
5345	Aluminum Pan	1.60 ea.
5347	Aluminum Pan	1.80 ea.
5431	Aluminum Pan	2.15 ea.
5433	Aluminum Pan	4.25 ea.
5468	Aluminum Pan	2.55 ea.
5280	Die-Cast Scoop	2.45 ea.
5281	Die-Cast Scoop	4.35 ea.
5282	Die-Cast Scoop	4.80 ea.
5283	Die-Cast Scoop	5.55 ea.

KEYSTONE'S AUTOMATIC WATERING SYSTEM PARTS

<u>Part</u>	<u>Name</u>	<u>Description</u>	<u>Unit Price</u>
5500	Tank -----	5 Gal. Polyethylene Tank -----	\$ 15.00
5501	Tank Fitting -----	Tubing Con. with shut-off -----	1.30
5510	Nylon Tubing -----	$\frac{1}{4}$ " O.D. White Nylon ----- Per ft.	.17
5520	Tee Fitting -----	Compression Fitting -----	.54
5525	Tee Fitting -----	Two Way - Thread and Compression ----	.45
5550	Nut -----	Compression Nut -----	.07
5560	Sleeve -----	Use with 5550 on $\frac{1}{4}$ " tubing -----	.03
5570	Fount -----	#5000 Harada Valve for Rats -----	2.20
			3.12 *
5575	Fount -----	#5020 Harada Valve for Mice -----	2.20
			3.12 *
5576	Fount -----	#5040 Harada Valve for Rabbits etc. -	2.70
			3.83 *
5580	Drain Cock -----	Ground plug shut-off cock -----	.95
5585	Shut-off Valve -----	Full Comp. shut-off valve -----	1.60
5590	Tube Strap -----	Copper tube strap for tubing -----	.10
5630	Elbow Fitting -----	Full Compression fitting -----	.35
5640	Elbow Fitting -----	One Comp. end - one thread 1/8 pipe -	.26
5660	2" Extension -----	Brass Connector for valves -----	.65
5665	2 $\frac{1}{2}$ " Extension -----	One male end 1/8 pipe thread -----	.65
5670	Cross -----	Four Way Fitting -----	.55
5680	Straight Fitting -----	1/8 thread and compression -----	.20
5690	Valve Stems -----	For Harada Valves #5000 -----	.35
7007	Quick Disconnect -----	Use with #7100 & #7200 -----	2.10
			3.00 *
7100	Quick Dis. Valve -----	Harada Valve for Rats -----	5.63
			6.90 **
7200	Quick Dis. Valve -----	Harada Valve for Mice -----	5.63
			6.90 *

Prices for quantities over 500 quoted on request * Stainless Steel

STAINLESS STEEL WATER TUBES

5/16" O.D. .028 Walls

<u>Model</u>	<u>Length</u>	<u>Straight</u>			
		<u>1-99</u>	<u>100</u>	<u>500</u>	<u>1000</u>
A-25	2 $\frac{1}{2}$ "	.41	.34	.29	.26
A-30	3 "	.42	.36	.30	.27
A-35	3 $\frac{1}{2}$ "	.45	.39	.33	.30
A-40	4 "	.47	.42	.36	.33
A-45	4 $\frac{1}{2}$ "	.48	.45	.39	.36
A-50	5 "	.51	.48	.44	.41
		<u>120' Bent</u>			
B-25	2 $\frac{1}{2}$ "	.45	.39	.33	.30
B-30	3 "	.47	.42	.36	.33
B-35	3 $\frac{1}{2}$ "	.50	.45	.39	.36
B-40	4 "	.51	.47	.41	.38
B-45	4 $\frac{1}{2}$ "	.53	.50	.44	.41
B-50	5 "	.56	.53	.48	.45

PRICES SUBJECT TO CHANGE WITHOUT NOTICE